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ABSTRACT

The Benton Visual Retention Test which is designed to assess visual perceptual, visual motor, and visuoconstructive abilities can give school personnel greater precision and range in testing. The standardization of this instrument was tested on 700 Houston elementary school students. Chronological age differences were maintained and correlation variances of IQs were slight. The test allows for interpretation of individual differences such as memory deficiency and perceptual deficiency. (RS)

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Benton's Visual Retention Test:

New Age, Scale Score, and Percentile Norms for Children

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Tests such as the Bender Gestalt, Draw-A-Person, and Visual Retention Tests have long been used to assess aspects of perceptual-motor functioning. These have become, despite a lack of educational validity, prominent vehicles for school psychologists, often determined to infer such diagnoses as minimal brain dysfunction on the basis of a marginal performance on a test for which the norms, if they exist, are also marginal.

Koppitz made a notable contribution in 1963 with the publication of children's norms for the Bender Gestalt Test. This tended to objectify interpretation, but validation studies have in general failed to produce promising results. The Bender Gestalt and Visual Retention tests are clinical instruments which are most frequently used in cutoff fashion. Samples of ostensibly normal and deviant subjects are examined. A statement may subsequently be made about an individual as to the probability of his being deviant. Unfortunately, such instruments resist standardization due to the ceilings that are invariably pressed in the course of attempting to utilize them beyond the effective range. It is one thing to make a probability statement about an individual, e.g., he cannot do the task and the odds are 7 in 9 that he is deviant; it is quite another to impose a quantitative range on performance in a heavily skewed distribution, so typical of age distributions in the upper reaches on tests of perceptual-motor functioning.

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If one is willing to restrict the range of applicability, then a reasonable standardization is possible. Consider, for example, the Bender Gestalt or Visual Retention Tests. Originally designed for use with adults, these tests span a number of years for children during which performance will improve as a function of age, until a level is reached that corresponds to adult competency. Within that span, the test may be properly subjected to standardization; beyond that span, it may not.

Koppitz' children's norms for the Bender lose applicability in the eighth year, the standard deviations of the age distributions exceeding the means, the distributions obviously being skewed as the result of a ceiling effect. Judgments are tenuous beyond this range. Second, the Bender is a copying task, yet considerable research has demonstrated that memory dysfunction is among the more prominent correlates of brain trauma, and would thus appear related to what we have been calling minimal brain dysfunction, if, indeed, the syndrome has educational utility.

The present investigation was directed toward providing school personnel with an instrument of greater precision and range. I refer to the Visual Retention Test (Benton, 1963), published by the Psychological Corporation.

In the manual, the test is defined as "...a clinical and research instrument designed to assess visual perceptual, visual motor and visuo-constructive abilities." It is frequently administered as a memory task, Administration A, in which each of 10 designs are exposed for ten seconds, then immediately reproduced from memory by the subject; or, as a copying task, Administration C, or both. The score differential between the two administrations, when sizeable, may be presumed to have diagnostic significance. Three sets of 10 designs each, Forms C, D, and E, constitute the

test stimuli, and two, C and D, are considered in this study. Scoring may be either the number of designs correctly reproduced, or the number of errors.

While the general purpose of the present study was standardization, five specific objectives were set.

(1) Present VRT norms for children are age scores only, and do not extend below eight years. However, a number of recent studies have demonstrated applicability of the VRT down to the age of five years. Thus, a downward extension to the approximate age of five was the first objective.

(2) There is suggestive evidence that Forms C and D are not of equal difficulty level. This issue was to be resolved in the study, and if supported, separate normative distributions would be developed.

(3) Age, scale and percentile distributions would be developed for a normative group (IQ 85 - 115), tested within six weeks of a point 8 months beyond their birthdates, kindergarten through grade six, and no repeaters. The 8th month was selected for a purpose which was not relevant to the present studies.

(4) To identify ceilings beyond which normative interpretation is tenuous on the basis of a clinically meaningful difference between adjacent age distributions.

(5) To determine test-retest reliability coefficients for two of the grade distributions, kindergarten and grade three.

Procedures

A sample of more than 700 children from the Aldine Independent School District, suburban to Houston and with a school population of over 25,000, were given the Visual Retention Test, both copy and memory administrations,

and the Otis-Lennon Mental Ability Test. Of these, 521 were in regular classes and 389 had IQ's between 85 and 115. These comprised the normative sample. Approximately equal numbers of boys and girls were examined, and within the conditions of age earlier discussed, selection was random.

The examinations were given by first and second year graduate students in psychology while enrolled in a course in psychological appraisal. All received a thorough introduction to the administration and scoring of the VRT prior to field testing, and interjudge agreement in practice scoring sessions was found to be quite satisfactory.

Results

Chronological age differences were maintained at almost exactly 12-month intervals, at mean age levels 5-8 through 11-8. No IQ differences were found among the grade levels, nor were significant sex differences observed.

Form C is more difficult than Form D under the copying condition. For number-correct scoring, the difference maintains throughout the effective range of the test, as it does for number-of-errors scoring.

Form D is more difficult than Form C under the memory condition. For number-correct scoring the difference is greater in the middle age range; and for number-of-errors scoring the difference is substantial at the younger age levels and collapses at the nine-year level.

Correlations of the scores with IQ varied between .13 and .28, and do not appear operationally significant, but these have not been corrected for restriction of range of intelligence.

For both forms and administrations, correlation coefficients between number correct and number of errors vary from -.79 to -.94.

While number correct and errors are significantly correlated for the normative group, the interpretative issue for a single child is somewhat different. For example, a child having a number-correct score of five must by definition have an error score of at least five, there being ten designs in all. But it is theoretically possible for another child with a number-correct score of five to have an error score of 15. This approach to interpretation demonstrates the successful quantification of a clinical or qualitative observation--that is, the generally poorer performance of the second child, and does so without the invocation of judgment on the part of an examiner, however well trained. It provides an opportunity to avoid loose clinical interpretation in the presence of a reasonable and objective alternative (See fourth case on sample interpretation sheet).

Age score distributions were derived by fitting second degree curves to the score means at each age level for every condition of administration, scoring and form, a total of eight. The obtained values were plotted, curves fitted, and age scores corresponding to every possible raw score value read back from the resulting graph.

Scale score distributions with a mean of 100 and standard deviation of 15, and percentile distributions, were computed for all conditions. These distributions constitute the norms. No distribution was prepared where raw score mean differences between two adjacent age levels were less than .5 (the clinically significant difference essential to alter a diagnosis taken by Benton in the manual to be one). This is the criterion used to avoid the trap of over-interpretation, that is, forcing the ceiling.

While the captions on the norms give the applicable age in round numbers, i.e., 5, 6, 7, etc., the age means for which these distributions are applicable are at the eighth month, i.e., 5-8, 6-8, 7-8, etc. Thus,

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age ranges for the distributions are 5-2 through 6-1, 6-2 through 7-1, 7-2 through 8-1, etc. However, considering the dearth of convincing validity data for tests of this nature, the use of the norms as presented is very probably adequate for most purposes.

Test-retest reliability coefficients are reported on the reverse side of the last page of the norms in the handout, Tables 18 and 19. When corrected for restriction of range of intelligence, these coefficients vary from .85 to .91, and may be considered acceptable for an essentially clinical instrument which is judgmentally scored. Test-retest interval was approximately two months.

Finally, the separate handout presents four possible interpretative situations, all with different diagnostic outcomes. The first is of an average child in his fifth year; the second, an illustration of a memory deficiency; third, a likely perceptual deficiency where, in absolute terms, the child copies the designs as well as he can reproduce them from memory; fourth, an example of the qualitative inference noted earlier, with one child performing much less well than the other; and fifth, a severe memory deficit, in which case one is well advised to inquire as to intellectual functioning. If it parallels prowess in copying, the memory deficit may have far more serious educational implications.

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ABSTRACT

An instrument to determine attitudes of Anglo- and Mexican-American parents toward Spanish-English bilingualism has been developed. This study examines the feasibility of revising this instrument to measure attitudes toward Puerto Rican bilingualism. Ninety-two Puerto Rican, 39 black, and 34 white parents with children in elementary schools in Connecticut were interviewed. Bilingual parents had a more positive and restricted range of scores than monolingual ones. A larger number of poor responses to items came from the bilingual parents. Each ethnic group showed a relatively positive attitude toward bilingualism and the attitudes of blacks and whites were similar. (RS)

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Revising the Attitude Toward Bilingual Scale
for Use in the Northeast

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University of Bridgeport

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TM 002 595

Paper Presented at the Annual Meeting of the National Council
of Measurement in Education, New Orleans, February 1973

Revising the Attitude Toward Bilingual Scale
for Use in the Northeast*

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The Puerto Rican population in the Northeast has grown in recent years to over 1.5 million people. (Rodríguez, 1970). Puerto Rican pupils have suffered a significant lack of equitable educational opportunities in mainland schools (Coleman, 1966). Following the lead of the Southwest, school systems in the Northeast have initiated increasing numbers of bilingual programs to respond to this situation. However, as several experts in the field have pointed out (Fishman & Lovas, 1970; Horner, 1971; Saville & Troike, 1970), there is a critical need for sociolinguistic surveys of the communities to be served, including a continuing assessment of attitudes toward bilingualism and bilingual education.

Mosley (1969) has developed a promising instrument to determine the attitudes of Anglo- and Mexican-American parents toward Spanish-English bilingualism. Mosley's scale consists of 20 Likert-type items, each having five response options ranging from complete disagreement (1) to complete agreement (5) with the given statement concerning bilingualism. Both negative and positive statements are included in an effort to reduce response set. Mosley reported significant ($p < .01$) item validities for the 20 items and a split-half reliability of .69, corrected to .80, as a result of its use with a sample of Mexican- and Anglo-American parents in Texas. The appropriateness of Mosley's instrument for use in the Northeast, however, has not been assessed.

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Objectives

The purposes of this study were to examine the feasibility and reliability of a version of the Mosley Attitude Toward Bilingualism Scale revised for use with a multi-ethnic sample of parents in the Northeast.

Method

The instrument was Mosley's Attitude Toward Bilingualism Scale revised so that the term "Mexican-American(s)" was deleted and replaced by "Puerto Rican(s)." The instrument was administered orally during home interviews with a multi-ethnic sample of parents in a large Connecticut city. The interviews were conducted on an individual basis by a team of professional educators in the parents' homes. Each interview lasted approximately twenty minutes. The interviewers who visited the homes of the Puerto Rican parents were bilingual.

Data Sources

The subjects of the study consisted of 92 Puerto Rican, 39 Black, and 34 White parents having children in the primary grades of four schools where bilingual programs were being established. The subjects all resided in a core Connecticut city with a significant proportion (approximately 20 per cent) of Puerto Ricans.

Results

The means and standard deviations for each ethnic group are reported in Table I.

Table I
Revised Attitude Toward Bilingualism Scale:
Means and Standard Deviations of
Black, White, and Puerto Rican Parents

	n	\bar{x}	s	t
Black	39	4.01	.54	
				.37
White	34	3.96	.52	
Monolingual (subtotal)	73	3.99	.53	
				5.36**
Puerto Rican	92	4.36	.28	

** $p < .01$, two-tailed test

As can be seen by examining this table, each ethnic group of parents evidenced a relatively positive attitude toward bilingualism. The mean attitudes toward bilingualism between the black and white parents were quite similar and, as indicated by a t-test, not significantly different. Moreover, a point-biserial coefficient of $-.04$ between the two monolingual groups and their measured attitude confirmed that they need not be partitioned by ethnic group membership for analysis purposes. In contrast, the bilingual (Puerto Rican) parents were revealed to have a significantly ($t=5.36$, $p < .01$) more positive attitude than the monolingual (black and white parents with respect to Spanish-English bilingualism. The low standard deviations, particularly for the bilingual (Puerto Rican) sample, indicated a restricted range of scores. This restricted array of scores revealed a discrimination problem for the instrument, especially in the case of the bilingual subjects.

Table II contains the results of analyses designed to examine the internal structure of the revised Mosley Scale when field-tested with the monolingual (black and white) parents.

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Insert Table II About Here
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Item validities, as measured by the correlations with total score, ranged from .14 to .66 for the monolingual sample. Only items 9, 14, and 20 failed to correlate significantly ($p < .01$) with the total score. Item 1 was noted as having a poor response option distribution in that greater than 60 percent of the sample selected option 5.

An odd-even split-half reliability was found to be .61 for the instrument when used with monolingual parents. A corrected value of .76 was determined by applying the Spearman Brown formula.

The item validities for the revised Mosley Scale when field-tested with the bilingual (Puerto Rican) parents are presented in Table III.

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As revealed in Table III, the item validities as measured by the correlations with the total score ranged from .23 to .50 for the bilingual sample. Items 2, 3, and 6 were found not to correlate significantly with total score. Items 1, 4, 5, 11, and 13 were noted to have poor response option distributions although each showed a significant relationship with the total score.

The restricted range of scores was further reflected in the finding of an odd-even split-half reliability of .40 for the instrument when used with the bilingual (Puerto Rican) sample. A corrected value of .57 was found by applying the Spearman Brown formula.

Table II

Analysis of Revised Attitude Toward Bilingualism Scale
Items: Monolingual Sample

Comment code: 1 - retain
2 - examine, poor response option distribution
3 - delete, low correlation with total score

Item #	r With Total Score*	Frequency of Response Option						Comment
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>NR</u>	
1	.46**	4	5	2	12	50	0	2
2	.47**	5	3	5	20	39	1	1
3	.31**	31	20	6	6	10	0	1
4	.50**	3	3	2	26	39	0	1
5	.34**	3	6	3	19	35	7	1
6	.58**	6	5	2	17	43	0	1
7	.63**	28	24	6	7	8	0	1
8	.63**	7	2	8	24	29	3	1
9	.28	15	21	15	9	11	2	3
10	.40**	7	11	4	20	28	3	1
11	.48**	33	21	2	7	5	3	1
12	.66**	4	5	7	20	36	1	1
13	.32**	37	22	6	2	3	3	1
14	.15	1	6	6	30	29	1	3
15	.62**	5	1	4	27	34	2	1
16	.53**	0	6	8	24	29	6	1
17	.34**	6	5	13	17	30	2	1
18	.46**	2	2	3	25	39	2	1
19	.45**	24	30	6	4	7	0	1
20	.14	25	27	6	5	6	4	3

* after rescaling negative items

** p<.01, two-tailed test

Table III

Analysis of Revised Attitude Toward Bilingualism Scale
Items: Bilingual Sample

Comment code: 1 - retain
2 - examine, poor response option distribution
3 - delete, low correlation with total score

<u>Item #</u>	<u>r With Total Score*</u>	<u>Frequency of Response Option</u>						<u>Comment</u>
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>NR</u>	
1	.34**	0	1	1	33	56	1	2
2	.23	0	3	1	36	52	0	3
3	.23	50	37	0	3	2	0	3
4	.35**	1	0	2	25	64	0	2
5	.32**	0	1	0	32	59	0	2
6	.23	1	0	2	46	43	0	3
7	.29**	25	44	4	3	15	1	1
8	.50**	2	5	2	37	46	0	1
9	.35**	3	4	6	47	32	0	3
10	.33**	0	1	2	48	41	0	1
11	.40**	60	27	0	3	1	1	2
12	.43**	0	0	1	39	52	0	1
13	.43**	63	22	3	1	3	0	2
14	.46**	1	1	3	38	45	1	3
15	.32**	6	17	17	27	25	0	1
16	.40**	0	0	1	48	43	0	1
17	.47**	1	0	0	36	55	0	1
18	.40**	0	0	1	37	54	0	1
19	.34**	34	46	4	3	2	3	1
20	.33**	43	35	5	3	2	4	3

* after rescaling negative items

** $p < .01$, two-tailed test

Conclusions

Analyses of the use of the revised Mosley Attitude Toward Bilingualism Scale revealed somewhat differential patterns for monolingual and bilingual parents in the Northeast. Bilingual parents were revealed to have a more positive and restricted range of scores than their monolingual counterparts. The same number but a different array of items were found to not have significant correlation coefficients with the total scores of the monolingual and bilingual samples. Moreover, an overlapping but much larger number of items revealed poor response distributions for the bilingual sample as compared to the monolingual sample. The corrected split-half reliability for the monolingual sample (.76) was comparable to that of the original use of the instrument, indicating that the items were moderately consistent with respect to content sampling. However, the corrected split-half reliability for the bilingual sample (.57) reflected the restricted range of scores obtained with the Puerto Rican parents.

Implications

These analyses reveal the revised Mosley Attitude Toward Bilingualism Scale to be a promising instrument for use in assessing the sociolinguistic attitudes of parents in communities considering Spanish-English bilingual education programs. The differential pattern of results for the monolingual and bilingual parents reveal that both groups might well be considered separately in devising appropriate instrumentation and programs involving both groups. The item analyses serve as the basis for further revision and refinement of this instrument for use in assessing the attitude towards Spanish-English bilingualism of the multi-ethnic population encountered in the cities of the Northeast. The instrument would seem in particular to need refinement to discriminate more effectively within the positive perceptions of Puerto Rican parents with respect to Spanish-English bilingualism.

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